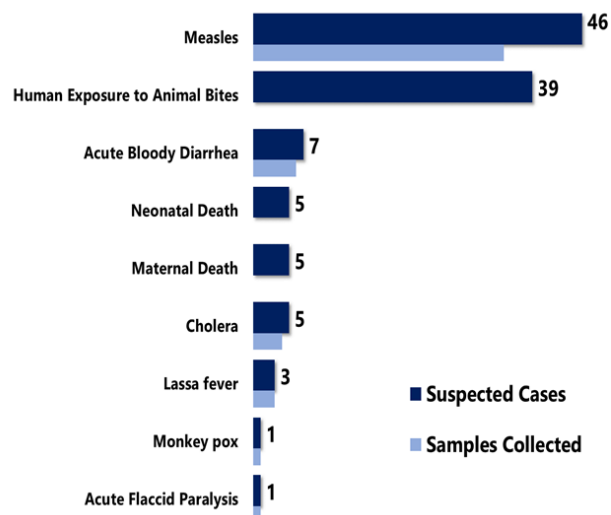


Highlights

Figure 1. Public Health Events Reported in Epi week 11



Keynotes and Events of Public Health Significance

- **A total of 112** events of public health importance including **10** deaths were reported
- **Completeness and timeliness** of health facility reports were both **94%**
- **Ongoing Measles outbreaks** in three counties

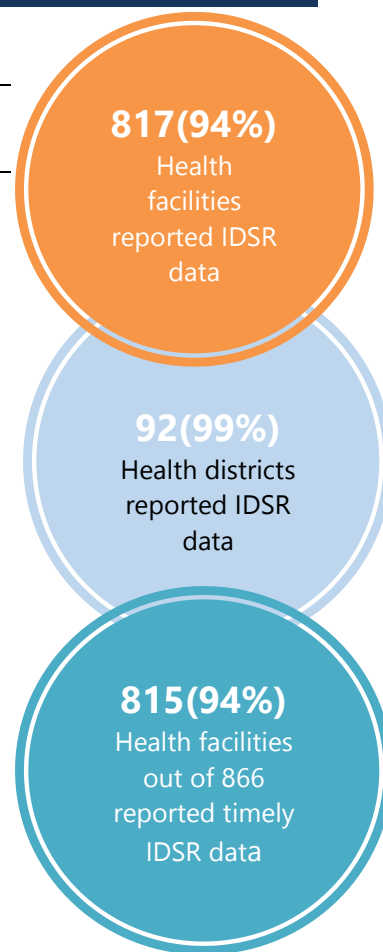
Reporting Coverage

Table 1. Health Facility Weekly IDSR Reporting Coverage, Liberia, Epi week 11, 2019

County	Number of Expected Report from Health Facility	Number of Reports Received	Number Received on Time	Completeness (%)	Timeliness (%)
Bomi	26	26	26	100	100
Bong	57	57	57	100	100
Gbarpolu	16	16	16	100	100
Grand Bassa	34	34	34	100	100
Grand Cape Mount	34	34	34	100	100
Grand Gedeh	24	24	24	100	100
Grand Kru	19	19	19	100	100
Lofa	59	59	59	100	100
Margibi	59	56	56	95	95
Maryland	26	8	8	31	31
Montserrado	351	323	321	92	91
Nimba	84	84	84	100	100
Rivercess	20	20	20	100	100
River Gee	20	20	20	100	100
Sinoe	37	37	37	100	100
Liberia	866	817	815	94	94

Legend: ≥80 <80

- The national target for weekly IDSR reporting is 80%
- All counties submitted weekly IDSR report on time to national level except Maryland County



Vaccine Preventable Diseases

Measles

- Forty-six (46) suspected cases were reported from Gbarpolu (11), Rivercess (7), Grand Gedeh (6), River Gee (5), Grand Kru (3), Montserrado (3), Sinoe (3), Bong (2), Lofa (2), Bomi (1), Grand Bassa (1), Nimba (1), and Margibi (1) Counties
- Thirty-five (35) specimens were collected pending laboratory confirmation
- Belleh and Bokomu Districts, Gbarpolu County, Gbehlai Geh District, Nimba County, and Greenville District, Sinoe County currently in outbreak phase
- Vaccination status:
 - Among suspected cases: 19 (41%) vaccinated, 15 (33%) not vaccinated and 12 (26%) unknown
- Age distribution
 - Among suspected cases: <1 year: 2(4.3%), 1 – 4 years: 8 (17.3%) and ≥5 years: 36 (78.2%)
- Cumulatively, since Epi-week one, 545 suspected cases have been reported; Of these, 294 have been tested by the laboratory and results showed 65 positive, 222 tested negative and 7 indeterminate
- Epi-classification is as follows: 317 (54.3%) confirmed cases (65 lab confirmed, 191 clinically confirmed, 61 epi-linked), 222 (44.4%) negative and 6 (1.2%) indeterminate (See Table 2)
- Of the 222 specimen tested negative for Measles, 173 specimens were tested for Rubella; 83 tested positive, 90 negative and 10 indeterminate for Rubella

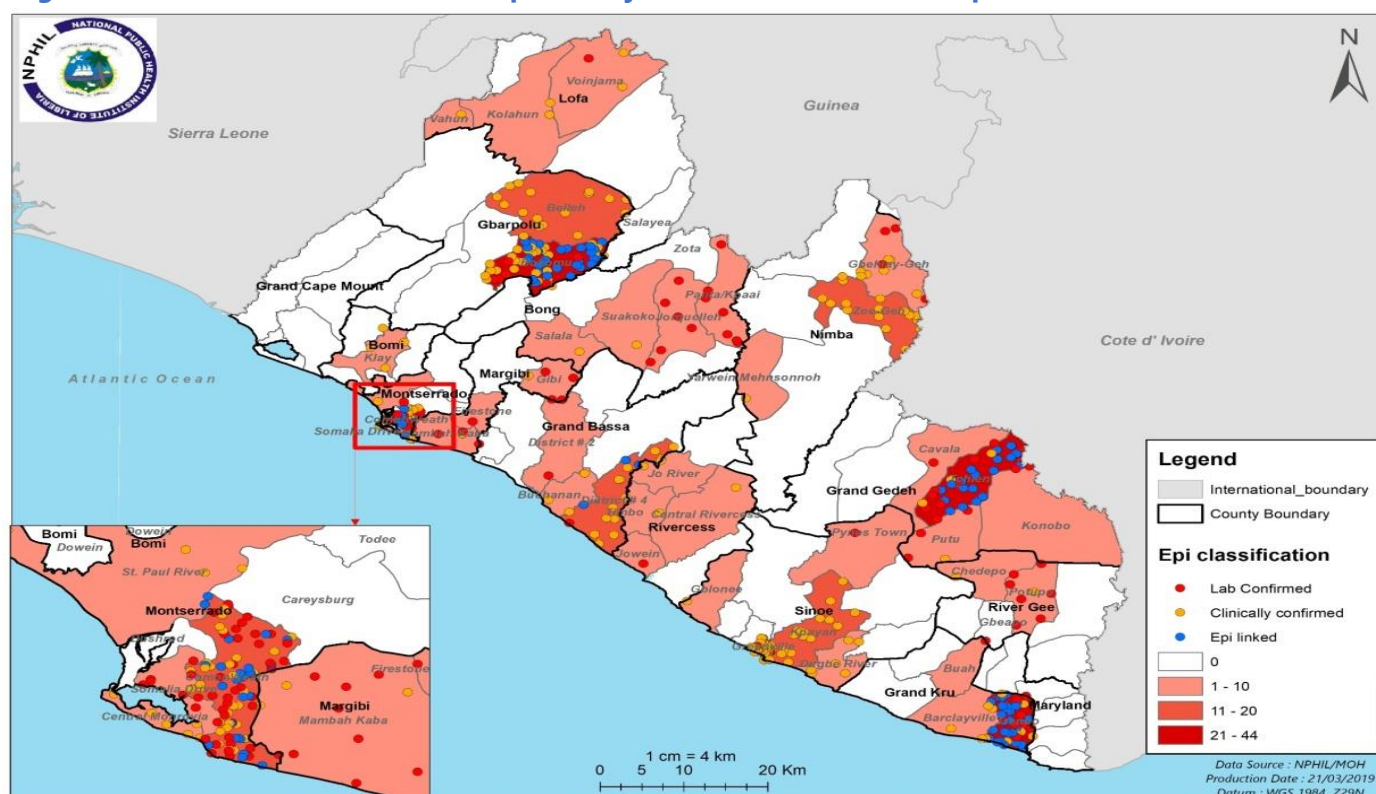
Public Health Action

- Case Management, active case search, health education, and community engagement are ongoing in districts that reported

Table 2. Cumulative Measles Cases Reported by County and Epi-classification, Liberia, Epi-week 1 - 11, 2019

Reporting County	Epi-classification					Total	Annualized Non-Measles Febrile Rash Illness Rate
	Lab confirmed	Epi-linked	Clinically confirmed	Indeterminate (Equivocal)	Discarded (Negative)		
Bomi	0	0	4	0	4	8	17.9
Bong	9	0	4	1	11	25	11.9
Gbarpolu	4	21	41	0	5	71	22.6
Grand Bassa	2	2	13	1	15	33	25.4
Grand Cape Mount	0	0	0	0	8	8	23.7
Grand Gedeh	13	14	10	0	14	51	42.0
Grand Kru	8	20	11	0	9	48	58.5
Lofa	1	0	6	0	6	13	8.2
Margibi	6	0	3	1	20	30	35.8
Maryland	0	0	0	0	1	1	2.8
Montserrado	9	4	10	1	55	79	17.9
Nimba	3	0	19	1	27	50	22.0
River Gee	5	0	7	0	21	33	118.3
Rivercess	1	0	10	0	20	31	105.2
Sinoe	4	0	53	1	6	64	22.0
Liberia	65	61	191	6	222	545	23.7
Target Achieved	>=2		Below Target	<2			

Figure 2. Confirmed Measles Cases Reported by Health District, Liberia, Epi-week 1 - 11, 2019



Acute Flaccid Paralysis (Suspected Polio)

- One cases reported from Sinoe County. Specimens were collected and pending shipment
- Cumulatively, since Epi week one, 14 cases have been reported, 9 tested negative and 5 pending laboratory confirmation (See Table 3)

Table 3. Non-polio AFP rate per 100,000 population less than 15 years, Liberia, Epi-week 1 - 11, 2019

County	< 15 years pop	# of AFP Cases Reported	# of Cases with Lab Result	Non-Polio AFP Rate	# of cases <14 days specimen collected	% of stool <14days	# of NPENTs	% of NPENT
Bomi	47576	0	0	0.0	0	0%	0	0%
Bong	196480	0	0	0.0	0	0%	0	0%
Gbarpolu	47163	0	0	0.0	0	0%	0	0%
Grand Bassa	125386	1	0	3.8	1	100%	0	0%
Grand Cape Mount	71872	1	1	6.6	1	100%	0	0%
Grand Gedeh	70844	1	0	6.7	1	100%	0	0%
Grand Kru	32755	0	0	0.0	0	0%	0	0%
Lofa	156050	0	0	0.0	0	0%	0	0%
Margibi	118729	1	1	4.0	1	100%	0	0%
Maryland	76884	1	0	6.1	1	100%	0	0%
Montserrado	653849	6	0	4.3	6	100%	0	0%
Nimba	261314	1	1	1.8	1	100%	0	0%
Rivercess	40444	0	0	0.0	0	0%	0	0%
River Gee	37775	0	0	0.0	0	0%	0	0%
Sinoe	57910	2	1	16.3	1	50%	0	0%
Liberia	1995031	14	4	3.3	13	93%	0	0%
Non-Polio AFP Rate	<2	Stool adequacy	<80%	Non-Polio Enterovirus	<10%	Silent		

Neonatal Tetanus



Liberia IDSR Epidemiology Bulletin

2019 Epi-week 11 (March 11 – 17, 2019)



- Zero cases reported County
- Cumulatively, since Epi-week one, 4 clinically diagnosed cases have been reported

Viral Hemorrhagic Diseases

Ebola Virus Disease (EVD)

- Zero alert reported
- Cumulatively, since Epi-week one, 7 EVD alerts have been reported and tested negative

Lassa fever

- Three (3) suspected cases reported from Grand Bassa (2) and Nimba (1) Counties
 - Specimens were collected pending laboratory testing
- Cumulatively, since Epi week one, 41 suspected cases have been reported including four deaths
 - Of these, eight have been tested by the laboratory. Epi-classification is as follows: 2 lab-confirmed, 6 not a case and 33 pending laboratory confirmation

Yellow fever

- Zero suspected cases reported
- Cumulatively, since Epi-week one, 19 suspected cases have been reported of which 18 tested negative and one pending laboratory confirmation

Monkeypox

- One suspected case reported from Lofa County
 - Specimen was collected pending shipment
- Cumulatively, since Epi week one, 48 suspected cases have been reported and no sample has been shipped

Meningitis

- Zero suspected cases reported
- Cumulatively, since Epi-week one, 11 suspected cases have been reported, 9 tested negative, one pending laboratory confirmation, and specimen was not collected

Events of Public Health Importance

Maternal Mortality

- Five (5) deaths reported from Bomi, Margibi, Nimba, River Gee and Sinoe Counties
- Reported causes are: Postpartum Hemorrhage (2) and Anemia (1), Sepsis (2)
- All deaths were reported to have occurred in health facility
- Cumulatively, since Epi-week one, 40 maternal deaths have been reported (See Table 4)

Table 4. Annualized and Cumulative Maternal Deaths Reported by Counties, Liberia, Epi-week 1 - 11, 2019

County	Estimated Annual Live birth (4.3%)	Current week	Cumulative	% of Cumulative Maternal deaths	Annualized Maternal Mortality Ratio/100,000
Maryland	7347	0	4	10	257
Grand Gedeh	6770	0	3	8	209
Margibi	11345	1	4	10	167
River Gee	3610	1	1	3	131
Bong	18775	0	5	13	126
Rivercess	3865	0	1	3	122
Grand Bassa	11981	0	3	8	118
Nimba	24970	1	6	15	114
Gbarpolu	4507	0	1	3	105
Bomi	4546	1	1	3	104
Sinoe	5534	1	1	3	85
Montserrado	62479	0	9	23	68
Lofa	14911	0	1	3	32
Grand Cape Mount	6868	0	0	0	0
Grand Kru	3130	0	0	0	0
Liberia (National)	190636	5	40	100	99

Neonatal Mortality

- Five (5) deaths were reported from Gbarpolu, Grand Kru, Grand Gedeh, Bong and Montserrado Counties
- Reported causes of deaths: Sepsis (2), Asphyxia (2), and Preterm (1)
- Four (4) deaths were reported to have occurred in health facility while one occurred in community
- Cumulatively, since Epi-week one, 131 neonatal deaths have been reported (*See Table 5*)

Table 5. Annualized and Cumulative Neonatal Deaths Reported by Counties, Liberia, Epi-week 1 - 11, 2019

County	Estimated Annual Live birth (4.3%)	Current week	Cumulative	% of Cumulative Neonatal deaths	Annualized Neonatal Mortality Ratio/1,000
Grand Kru	3130	1	9	7	13.6
Montserrado	62479	1	66	50	5.0
Grand Gedeh	6770	1	7	5	4.9
Margibi	11345	0	11	8	4.6
Maryland	7347	0	6	5	3.9
Bong	18775	1	13	10	3.3
Lofa	14911	0	9	7	2.9
River Gee	3610	0	2	2	2.6
Bomi	4546	0	2	2	2.1
Gbarpolu	4507	1	1	1	1.0
Grand Bassa	11981	0	2	2	0.8
Grand Cape Mount	6868	0	1	1	0.7
Nimba	24970	0	2	2	0.4
Rivercess	3865	0	0	0	0.0
Sinoe	5534	0	0	0	0.0
Liberia (National)	190636	5	131	100	3.2

Other Reportable Diseases

Animal Bites (Human Exposure to Rabies)

- Thirty-nine (39) cases were reported from Montserrado (19), Nimba (5), Maryland (3), Rivercess (2), Sinoe (2), Gbarpolu (2), Grand Bassa (1), Grand Gedeh (1), Margibi (1), River Gee (1), Bong (1) and Grand Kru (1) Counties
- Cumulatively, since Epi-week one, 392 suspected cases of animal bites have been reported in human

Acute Bloody Diarrhea (Suspected Shigellosis)

- Seven (7) suspected cases were reported from Margibi (2), Grand Cape Mount, Grand Gedeh, Nimba, Rivercess and River Gee Counties
- Five (5) specimens were collected, two tested negative by the National Reference Laboratory.
- Cumulatively, since Epi-week one, 59 acute bloody diarrhea cases have been reported with 41 stool specimens collected; 24 tested, 3 positive, 21 not a case negative, 35 suspected.

Severe Acute Watery Diarrhea (Cholera)

- Five (5) suspected cases were reported from; Grand Kru (3), Bomi (1) and river Gee (1) County
- One specimen was collected from Bomi County; Tested negative
- Cumulatively, since Epi-week one, 25 suspected cases have been reported with 17 specimens collected; 15 tested negative and 2 pending testing

Unexplained Cluster of Health Events

- Zero cases reported
- Cumulatively, since Epi-week one, one case of unexplained death has been reported

Points of Entry

- Zero IDSR alert detected and verified
- A total of 4197 travelers were recorded for the week (See Table 6)

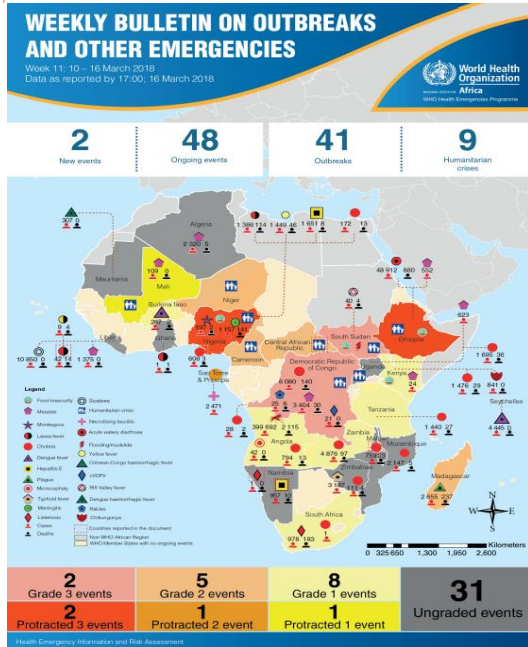
Table 6. Total Travelers, IDSR Alerts Detected and Verified at Points of Entry, Liberia, Epi-week 11, 2019

Type of Ports	Point of Entry	Weekly total	Arrival	Departure	Yellow Book Issued	Yellow Book Damage/Card Replaced	Travelers Vaccinated	IDSR Alerts	Alerts Verified
Airport	James S. Paynes	104	52	52	0	0	0	0	0
	Robert International Airport	2671	1896	775	40	15	0	0	0
Seaport	Freeport of Monrovia	84	42	42	0	0	0	0	0
	Buchanan Port	86	43	43	0	0	0	0	0
Ground Crossing	Bo Water Side	558	196	362	37	10	0	0	0
	Ganta	408	184	224	34	34	0	0	0
	Yekepa	114	51	63	0	0	0	0	0
	Loguatuo	85	50	35	8	8	0	0	0
	Nursing Division	87	73	14	52	87	35	0	0
Total Traveler for the Week		4197	2587	1610	206	102	104	0	0

Note: Yellow book issue for both arrival and departure; Vaccination coverage for both arrival and departure

AFRO Public Health Events

The National Public Health Institute of Liberia continues to monitor acute public health emergencies and outbreaks occurring in the African Region in order to ensure preparedness and preventive measures are implemented



During this week, 53 events are being monitored through WHO Health Emergencies Program in the African Region. Key events highlighted during the week include the following:

- Listeriosis in Nigeria
- Cholera in north-east Nigeria
- Cholera in Malawi
- Hepatitis E in Namibia
- Lassa fever in Liberia
- Humanitarian crisis in Central African Republic

Outbreaks

Belleh and Bokomu Districts, Gbarpolu County: Measles

- Reported eleven (10) new suspected cases through active case search
- All reported cases were treated and discharged
- Ongoing community awareness and active case search in affected and surrounding communities

Gbeshay-Geh District, Nimba County: Measles

- Reported one new suspected case
- Patient was treated and discharged
- Active case search and community engagement ongoing

Greenville District, Sinoe County: Measles

- Reported 3 new suspected cases
- Reported cases were treated and discharged
- As of Epi wk 12 a total of 21 suspected cases have been reported (Lab-confirmed 3, Epi-linked 18)
- CHT and WHO are conducting a joint epidemiological data review.
- Active case search and community engagement ongoing

Public Health Measures

National level

- Providing technical remote support to Counties
 - Heighten surveillance in affected and surrounding communities

County level



Liberia IDSR Epidemiology Bulletin

2019 Epi-week 11 (March 11– 17, 2019)



- Case management for all reported cases ongoing
- Active case search ongoing in affected communities for Measles and Lassa fever

Notes

- *Completeness* refers to the proportion of expected weekly IDSR reports received (target: $\geq 80\%$)
- *Timeliness* refers to the proportion of expected weekly IDSR reports received by the next level on time (target: $\geq 80\%$). Time requirement for weekly IDSR reports:
 - Health facility - required on or before 5:00pm every Saturday to the district level
 - Health district - required on or before 5:00pm every Sunday to the county level
 - County - required on or before 5:00pm every Monday to the national level
- *Non-polio AFP rate* is the proportion of non-polio AFP cases per 100,000 among the estimated population under 15 years of age in 2017 (annual target: $\geq 2/100,000$)
- *Non-measles febrile rash illness rate* refers to the proportion of Negative measles cases per 100,000 population
- *Annualized maternal mortality rate* refers to the maternal mortality rate of a given period less than one year and it is the number of maternal deaths per 100,000 live births
- *Annualized neonatal mortality rate* refers to the neonatal mortality ratio of a given period less than one year and it is the number of neonatal deaths per 1,000 live births
- *Epi-linked* refers to any suspected case that has not had a specimen taken for serologic confirmation but is linked to a laboratory confirmed case
- *Confirmed case* refers to a case whose specimen has tested positive or reactive upon laboratory testing, or has been classified as confirmed by either epidemiologic linkage with a confirmed case, or clinical compatibility with the disease or condition
- *Case Fatality Rate (CFR)* is the proportion of deaths among confirmed cases

Liberia IDSR Epidemiology Bulletin

2019 Epi-week 11 (March 11 – 17, 2019)

Counties	No. of Expected Health District	No. of Health District Reported	Acute Flaccid Paralysis (Suspected Polio)		Acute Bloody Diarrhoea (Shigellosis)		Severe Acute Watery Diarrhoea (Cholera)		Human Exposure to Animal bites (Suspected Rabies)		Lassa fever		Measles		Meningitis		Maternal Mortality		Neonatal Mortality		Neonatal Tetanus		Ebola Virus Disease		Yellow fever		Monkeypox		Dengue fever		Buruli Ulcer		MDR Tuberculosis		Yaws		Unexplained Cluster of deaths		Unexplained Cluster of Health Events/Disease		Other Diseases/Events									
			A	D	A	D	A	D	A	D	A	D	A	D	A	D	A	D	A	D	A	D	A	D	A	D	A	D	A	D	A	D	A	D	A	D	A	D	A	D										
Bomi	4	4	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Bong	9	9	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Gbarpolu	5	5	0	0	0	0	0	0	2	0	0	0	11	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Grand Bassa	8	8	0	0	0	0	0	0	1	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Grand Cape Mount	5	5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Grand Gedeh	6	6	0	0	1	0	0	0	1	0	0	0	6	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grand Kru	5	5	0	0	0	0	3	0	1	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Lofa	6	6	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Margibi	4	4	0	0	2	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maryland	6	6	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Montserrado	7	7	0	0	0	0	0	0	19	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nimba	6	6	0	0	1	0	0	0	5	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rivercess	6	6	0	0	1	0	0	0	2	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
River Gee	6	6	0	0	1	0	1	0	1	0	0	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sinoe	10	10	1	0	0	0	0	0	2	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Weekly	93	93	1	0	7	0	5	0	39	0	3	0	46	0	0	0	5	5	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Reported			14	0	59	0	25	0	392	0	41	4	545	0	11	0	40	131	1	2	5	2	19	0	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0		
Cumulative Laboratory Confirmed			0	0	3	0	0	0	0	0	12	3	65	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

D = Dead

A = Alive

**National Public Health
Institute of Liberia
(NPHIL)**

MISSION

*To prevent and control
public health threats by
promoting healthy
outcomes and serving as a
source of knowledge*

VISION

*A center of excellence to
create health outcomes for
Liberians through a strong
preventive health
system*

Epidemiological bulletin published with support of WHO and CDC

For comments or questions, please contact

Thomas K. Nagbe, PA Dip., BSc, MPH
Director, Infectious Disease and Epidemiology Division
National IHR Focal Person
National Public Health Institute of Liberia
Republic of Liberia
Email: tnknie31112@gmail.com
Phone: +231 886 937386/777442444
Website: www.nationalphil.org

Ralph W. Jetoh, MD
Deputy Director
Infectious Disease and Epidemiology Division
National Public Health Institute of Liberia
Republic of Liberia
Email: ralphica2000@gmail.com
Phone: +231 886526388/777372655
Website: www.nationalphil.org

EDITORIAL TEAM

NPHIL

*Roseline N. George
Advertus N. Mianah
Irene Pewu
Godwina B. Williams
Samuel Zayzay
Lasee W. Colee
T. Lafayette Hall
Sumor L. Flomo
McAllen S. Quiah
Trokon O. Yeabah*

MoH

Partners: WHO & US CDC

*Carl Kinkade
Nailah Smith
Dr. Julius Monday*